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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,404

10/01/2003

Takehiko Yamakawa

MTS-3474US

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7590

10/19/2004

RATNERPRESTIA

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EXAMINER

HAM, SEUNGSOOK

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,404

Applicant(s)

YAMAKAWA ET AL.

Examiner

Seungsook Ham

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/18/04, 10/1/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The preliminary amendment submitted on 10/01/03 contains a typographical error. On page 3, paragraph 10 of the preliminary amendment, "Please replace the paragraph, ...page 18, line 1" should be corrected to –Please replace the paragraph, ... page 18, **line 21**.-- The examiner suggests to correct the error in next response to the Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, "said holding members are the holding members holding two or more..." appears to be redundant.

In claim 22, line 3, "the resonators according to claim 1 or the filters according to claim 11 of filtering a sending signal..." is vague and indefinite as to how a resonator recited in claim 1 or a filter recited claim 11 is structurally related to the elements recited in claim 22.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 8/6, 11, 12, 14, 17, 19/17, and 20-24 are rejected under 35

U.S.C. 102(b) as being anticipated by Ishikawa et al. (US '006).

Ishikawa et al. (figs. 1 and 2) discloses a resonator/filter comprising: a plurality of dielectric elements 51-58; a housing 1, 2 accommodating the dielectric elements; a holding member(s) 7 holding a dielectric element 52 so as to have a predetermined clearance generated between a dielectric element surface 52a, 52b of the dielectric element to which a generated electric field in the dielectric element is substantially orthogonal and a housing surface 1 of the housing opposed to the dielectric element surface (see fig. 2); the dielectric element operating in TE mode (col. 5, line 51); and the dielectric element is a quarter-cylindrical shape and a hole at the center (see fig. 17).

Regarding claim 22, Ishikawa et al. also teaches that the dielectric resonator/filter can be used in a communication apparatus (col. 1, lines 9-15).

The method steps recited in claim 23 and 24 are implicit from the device of Ishikawa et al. since the structure of the resonator/filter is same as the applicant's claimed invention.

Claims 1, 4, 11, 15, and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Mansour et al. (WO '221, cited by Applicant).

Mansour et al. (figs. 4A-4C and 8) discloses a resonator/filter comprising: a dielectric element 52; a housing 56 accommodating the dielectric element; a holding member 54 holding a dielectric element 52 so as to have a predetermined clearance 64

generated between a dielectric element surface 60 of the dielectric element to which a generated electric field in the dielectric element is substantially orthogonal and a housing surface of the housing opposed to the dielectric element surface (see fig. 4C, page 5, lines 3-18); and the dielectric element is a half-cylindrical shape.

Regarding claim 22, Mansour et al. also teaches that the dielectric resonator/filter can be used in a communication apparatus (i.e., microwave filters), and also discloses sending/receiving means 104, 106 (see fig. 8).

The method steps recited in claim 23 and 24 are implicit from the device of Mansour et al. since the structure of the resonator/filter is same as the applicant's claimed invention.

Claim Rejections - 35 USC § 102/103

Claims 2, 3, 12 and 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mansour et al. (WO'221).

Mansour et al. does not specifically address that the dielectric element is operating in TE mode and the holding member has a low relative permittivity material. However, it is inherent from the device of Mansour et al. that the dielectric element 52 is a TE mode resonator since the dielectric element has a cylindrical shape which commonly contains a TE mode as a dominating mode. Alternately, it would have been obvious to one of ordinary skill in the art to provide TE mode dielectric element since such TE mode resonator is well known in the art and requires only a routine skill in the art.

Regarding the holding member, Mansour et al. is silent as to what type of material is used as a holding member. However, it is inherent from the device of Mansour et al. that the dielectric support 54 has a low relative permittivity material since it is a common knowledge in the dielectric resonator field that a dielectric support has a low permittivity compared to the dielectric resonator. Alternatively, it would have been obvious to one of ordinary skill in the art to use a low relative permittivity material as a support/holding member since such design technique is well known in the art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-10, 16-20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mansour et al. (WO'221) in view of Nishikawa et al. (US '397, cited by the Applicant).

Mansour et al. is applied as above. Mansour et al. does not show the dielectric element can be a quarter-cylindrical shape, a cylindrical shape with a center hole, or polygonal shape. Nishikawa et al. (figs. 2-8) discloses a dielectric element having different shapes. It would have been obvious to one of ordinary skill in the art to modify the dielectric elements with different shapes in the device of Mansour et al. since such modifications in the shape does not alter the resonator/filter characteristic and also such resonator shapes are well known in the art as shown by Nishikawa et al.

Moreover, Mansour et al. does not show input/output probes are placed on where the dielectric element is held. Nishikawa et al. (figs. 9, 15 and 25) discloses the dielectric resonator/filter having input/output probes 34, 38 are placed on where the dielectric element is held. It would have been obvious to one of ordinary skill in the art to provide the input/output probes where the dielectric element is held in the device of Mansour et al. to effectively resonate each resonator as taught by Nishikawa et al. (col. 5, lines 10-38).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mansour et al. (WO'221) in view of Syrett et al. (US '496).

Mansour et al. is applied as above. Mansour et al. does not show the holding members hold two or more dielectric elements. Syrett et al. (fig. 2) discloses a dielectric filter having a plurality of dielectric elements disposed in a holding member 40. It would have been obvious to one of ordinary skill in the art to place a plurality of dielectric elements in a holding member in the device of Mansour et al. since such design technique is well known in the art as shown by Syrett et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wakino et al. (US '652) discloses a conventional dielectric filter having a dielectric element supported by a spacer having a low permittivity material (i.e., low dielectric constant, col. 4, lines 5-12);


Sogo et al. (US '804) discloses a dielectric resonator circuit having a semi-circular dielectric element; and

Fiedziuszek et al. (US '074) discloses a plurality of dielectric resonators disposed on a single holding member.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Seungsook Ham
Primary Examiner
Art Unit 2817

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